NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

PASTURE AND HAY PLANTING

(Acre)

CODE 512

DEFINITION

Establishing native or introduced forage species.

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

- Establish adapted and compatible species, varieties, or cultivars.
- Improve or maintain livestock nutrition and/or health.
- Extend the length of the grazing season.
- Provide emergency forage production.
- Reduce soil erosion by wind and/or water.

CONDITIONS WHERE PRACTICE APPLIES

This practice may be applied on cropland, hayland, pastureland, and other agricultural lands where forage production is feasible and desired.

CRITERIA

General Criteria Applicable to All Purposes

Plant species and their cultivars shall be selected based upon:

- ❖ Climatic conditions, such as *total* annual rainfall, seasonal rainfall patterns, growing season length, humidity levels, temperature extremes and the USDA Plant Hardiness Zones.
- ❖ Soil condition and position attributes such as pH, available water holding capacity, aspect, drainage class, inherent fertility, salinity and alkalinity, flooding and ponding, and levels of toxic elements that may be present such as selenium and aluminum.
- ❖ Plant resistance to disease and insects common to the site or location.
- ❖ Plant compatibility with other forage species and their selected cultivar(s) in rate of establishment, maturity, and growth habit when seeded together as a forage mixture.
- ❖ *Producer objectives and site characteristics. These include (1) regrowth characteristics; (2) stand longevity; (3) water needs; (4) forage quality: (5) bloat hazard.*

Specified seeding/plant material rates, methods of planting and date of planting shall be consistent with documented guidance cited by research institutions or agency demonstration trials for achieving satisfactory establishment.

Seeding rates will be calculated on a pure live seed (PLS) basis.

Provide a firm, weed-free seedbed that ensures seed will contact soil moisture uniformly, facilitates seedling emergence, and provides a medium that does not restrict or allow roots to become dry.

All seed and planting materials shall be labeled and meet state seed quality law standards.

Legume seed shall be inoculated with the proper, viable rhizobia before planting. *See*

Agronomy Technical Note #3 for information on the use of inoculants.

A seedbed will be prepared that is free, or very nearly free, of all competing vegetation and is not subject to erosion. A firm seedbed will be provided in all cases. A seedbed is firm enough when the bootheel imprint of an average person leaves a maximum impression in the soil of one-half inch.

Existing perennial vegetation will be destroyed prior to seeding. This may be accomplished by chemical or mechanical means.

Seeding equipment will be a drill capable of placing the seed at the proper depth, provide a uniform flow of seed at the proper rate, and have a packer wheel to press the soil firmly over the seed. In lieu of packer wheels, a cultipacker may be used after seeding.

Seeding depth for loam, silty clay loam and silty clay soils is one-quarter to one-half inch. Seeding depth for sands, loamy sands and sandy-loams is one-half to one inch.

Adapted improved varieties of grasses, forbs, and shrubs have been developed and should be used when available. Certified seed should be used when available. If certified seed is not available, named varieties will be used. In rare instances when named varieties are not available, utilize seed from as near the area to be seeded as possible. Seed with a variety not stated (VNS) should be from a source 150 miles north and 300 miles south of the area to be seeded. Similar elevation and precipitation determine the east-west range. At a maximum, the seed will originate from an adjoining state (Colorado, Idaho, Montana, Nebraska, North Dakota, South Dakota, or Utah).

Seed will meet all state seed laws. All seed shall have a germination /purity test completed by a certified tester no more than twelve (12) months prior to planting.

See Plant Materials Technical Note #3 for adapted species, seeding rates, recommended varieties/cultivars and seeding dates.

The previous two years of herbicide application will be documented for the area to be seeded. Any potential carryover problems will be addressed by delaying seeding, seeding a cover crop, or altering the seeding mix species composition.

Cover crop establishment may be required under certain conditions. See Table 1 or the 340 Cover Crop standard for recommendations on cover crop establishment. The temporary cover will be prevented from producing seed by planting late in the growing season, killing the crop with herbicides, or clipping in the late boot stage.

Table 1 – Temporary Cover Recommendations

Cover Crop	***Minimum Seeding Rate***	***Seeding Dates***
Oats/Barley	*¾ bu./ac*	*4/1 – 6/1*
Grain Sorghum	*8 lbs./ac*	*6/15 – 7/15*
Millet	*10 lbs./ac*	*6/15 – 7/15*

1 bu. wheat or soybeans = 60 lbs
1 bu. corn or sorghum = 56 lbs
1 bu. Barley = 48 lbs
1 bu. Oats = 32 lbs

Seedbed preparation and planting shall be done in such a manner as to minimize tillage operations. When seeding into residue of certain harvested crops (e.g. sugar beets, soybeans, beans, etc.), additional seedbed preparation may not be needed.

When planting on a clean seedbed, exposure to erosion can be minimized by completing tillage and planting in a single operation, or by performing primary tillage no more than three days before planting.

Areas around waterways or within 100 feet of a perennial stream or permanent waterbody should receive special consideration and attention during planning and practice implementation to insure rapid and adequate stand establishment.

Competitive weeds will be controlled by either herbicides or mechanical methods. Other pests that could threaten stand establishment will be controlled by the appropriate method. These practices should not disturb wildlife cover during critical periods, which is generally from spring greenup to July 15.

Additional Criteria for Improving or Maintaining Livestock Nutrition and/or Health.

Forage species must be capable of meeting the desired level of nutrition for the kind and class of the livestock to be fed.

Additional Criteria for Extending the Grazing Season

Forage species selected for establishment shall fulfill a recognized dietary deficiency within the yearlong forage management program.

Criteria for providing emergency forage production.

Select plants that will produce forage for use during periods when other on-farm/ranch forage is unavailable to meet livestock needs.

Criteria for reducing erosion by wind and/or water.

Plants shall have the ability to provide adequate ground cover, canopy cover, root mass, and vegetal retardance to wind forces and water flows either alone or in combination with other forage species when site conditions require erosion protection.

CONSIDERATIONS

Prescribed Burning, Prescribed Grazing, Brush Management, ~~and~~ Grazing Land Mechanical Treatment, and *Forage Harvest Management are* practices *that* may be used in combination with Pasture and Hay Planting.

Where wildlife management is an objective, the food and cover value of the planting can be enhanced by using an approved habitat evaluation procedure to aid in selecting plant species and providing for other habitat requirements necessary to achieve the objective.

Forage species planted in mixture should exhibit similar palatability to one another to avoid spot or selective grazing.

PLANS AND SPECIFICATIONS

Specifications for the establishment of pasture and hay plantings shall be prepared for each site or management unit according to the Criteria, Considerations, and Operations and Maintenance described in this standard, and shall be recorded on specification sheets, job sheets, in narrative statements in the conservation plan, or other acceptable documentation.

Specifications shall be recorded using the approved job sheet, which will be filed in the conservation plan.

Additional Documentation Required:

1. Location - Field Numbers and Map.

2. Acres and how determined.

3. Soil map unit information.

4. Erosion predictions (WY-ECS-40 or currently approved erosion prediction technology).

5. Method of seedbed preparation.

6. Seeding method and seed placement depth.

7. Seed inoculant used, if applicable.

8. PLS calculations.

9. Date and signature.

10. Date practice applied.

Job Sheet WY-ECS-25 is applicable to this practice.

OPERATION AND MAINTENANCE

Growth of seedlings or sprigs shall be monitored for water stress. Water stress may require reducing weeds, early harvest of any companion crops, irrigation when possible, or replanting failed stands, depending on the severity of the drought. Invasion by undesirable plants shall be controlled by cutting, using a selective herbicide, or by grazing management by manipulating livestock stocking rates, density, and duration of stay.

Insects and diseases shall be controlled when an infestation threatens stand survival.